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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/440,704	11/16/1999	TOMOKATSU KISHI	1450.1001	3313

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WASHINGTON, DC 20005

EXAMINER

EISEN, ALEXANDER

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/440,704

Applicant(s)

KISHI ET AL.

Examiner

Alexander Eisen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-11,13,14 and 18 is/are rejected.
- 7) ☒ Claim(s) 8 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

2. The amendment after final Office action has been entered.

Claim Objections

3. Objections to claims 9 and 18 are withdrawn necessitated by applicant's amendment.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-7, 9-10, 13-14 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Weber, US 5,745,086 in view of Tokunaga, US 5,982,344.

With respect to claim 1 and 10 Weber discloses a plasma panel, wherein each frame comprises subfields, and having a plurality of scanning and sustain electrodes arranged in parallel to each other, a plurality of addressing electrodes, wherein a reset (set-up) period is a period during which the distribution of wall charges in the plurality of discharge cells is uniform ("standardized"), an addressing period is a period during which wall charges are produced according to display data, and a sustain period during which sustain discharge is induced in the discharge cells. Weber also discloses a method, wherein during a reset period two pulses are

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applied in which applied voltage varies with time, pulses are alternate in polarity, before first pulse of positive polarity (72) is applied to second electrode (YSA), a pulse of negative polarity is applied to a first electrode (YSB) (see FIG. 11), an applied voltage in each first and second pulses is of triangular (ramping) wave whose voltage variation per unit time is constant in magnitude and continuously change in positive and negative direction accordingly. See FIGS. 10- 11, column 3, line 52 - column 4, line 47, column 8, line 61 - column 9, line 22 and column 10, lines 33-46. Weber teaches that the method when reset pulses are gradually changing increases the contrast ratio by performing full erasing of cells without application of "bulk erase/bulk write/bulk erase operation.

Weber does not disclose, however, that erase discharge in each second discharge period is achieved by applying to a first electrode a first erase pulse whose application voltage continuously changes with time in positive direction, and applying to a second electrode a second erase pulse whose application voltage continuously changes with time in a negative direction. In the first discharge period (see FIG. 11) pulses 70 and 72 are respectively applied to a first electrode YSB and a second electrode YsA respectively. In the second discharge period the first erase pulse whose voltage is rapidly raised in a positive direction applied to the first electrode YSB (see FIG. 11 and column 9, lines 16-30) and the second erase pulse whose voltage continuously changes in negative direction is applied to the second electrode YSA. The only difference is in the shape of the first pulse.

Tokunaga teaches a "soft" erasing technique, wherein reset pulses applied to the first and second electrodes RP_x and RP_y have long rising/falling time (see FIG. 2, column 4, lines 47-53). This, according to Tokunaga, also improves the contrast of the plasma display.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to improve the method of Weber by the teaching of Tokunaga for the benefit as described above, i.e. improving the contrast of the image produced by the plasma display.

As to claim 4, as can be seen from FIG. 11 of Weber, the first and second erase pulse have an adequate width in order to reach their "ultimate" voltages.

As to claims 5 and 13, the rate of changing erase voltages changes as can be seen from Tokunaga, FIG.2 being approximately exponential.

As to claim 6, change rate of erasing voltages in Weber are clearly constant and constitute a ramp.

As to claims 7 and 14, see Weber column9, lines 55-62.

As to claims 9 and 18, in the second erasing period of Weber, the first erase pulse is synchronized with the second erase pulse (74), see also column 9, lines 16-30.

6. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber in view of Tokunaga and further in view of Matsumoto et al., ("Matsumoto"), JP 10003281 A.

Weber discloses a plasma panel, wherein each frame comprises subfields, and wherein a reset (set-up) period is a period during which the distribution of wall charges in the plurality of discharge cells is uniform ("standardized"), an addressing period is a period during which wall charges are produced according to display data, and a sustain period during which sustain discharge is induced in the discharge cells. Weber also discloses a method, wherein during a reset period two pulses are applied in which applied voltage varies with time, pulses are alternate in polarity.

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Tokunaga teaches a "soft" erasing technique, wherein reset pulses applied to the first and second electrodes RP_x and RP_y have long rising/falling time (see FIG. 2, column 4, lines 47-53). This, according to Tokunaga, also improves the contrast of the plasma display.

None of the above discloses that full-surface write discharge and full surface erase Discharge are performed only in a specific subfield in each frame, and in the remaining subfields only erasing discharges are performed.

Matsumoto teaches a driving method for plasma display, wherein a full-surface discharge is performed only once per frame in a specific subfield (subfield A), and only erasing pulse E_p is used in the remaining subfields.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use technique of Matsumoto in the display of Weber, because this will improve quality of the display by providing lower black level and therefore increasing a contrast ratio of the display.

Allowable Subject Matter

7. Claims 8 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (703) 306-2988. The examiner can normally be reached on M-F (8:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on (703) 305-4709.

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Any response to this action should be **mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or **faxed to:**

(703) 872-9306 (for Technology Center 2600 only).

Hand-delivered responses should be **brought to:** Crystal Park Two, 2121 Crystal Drive,
Arlington, Virginia, Sixth Floor Receptionist.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be **directed to:** Technology Center 2600 Customer Service Office, whose telephone
number is **(703) 306-0377**.



Alexander Eisen
January 8, 2004